

ABSTRAK

ANALISIS PENGARUH KECEPATAN POTONG TERHADAP KINERJA MESIN PEMOTONG KERIPIK TEMPE

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(2026: xiv + 50 Halaman, 9 Gambar, 14 Tabel, 6 Lampiran)

Penelitian ini bertujuan untuk menganalisis pengaruh variasi kecepatan potong terhadap kinerja mesin pemotong keripik tempe otomatis yang ditinjau dari kualitas hasil irisan dan kapasitas produksi. Metode yang digunakan adalah eksperimen dengan variasi kecepatan potong 30 rpm, 40 rpm, dan 50 rpm, masing-masing dilakukan sebanyak tiga kali lipat menggunakan bahan uji tempe seberat 500 gram. Kualitas hasil irisan diukur berdasarkan persentase irisan kategori A (utuh), kategori B (retak), dan kategori C (hancur), sedangkan kapasitas produksi dihitung berdasarkan berat hasil irisan kategori A per satuan waktu. Hasil penelitian menunjukkan bahwa kecepatan potong berpengaruh terhadap kualitas hasil irisan dan kapasitas produksi mesin. Kecepatan 30 rpm menghasilkan kualitas irisan terbaik dengan persentase kategori A sebesar 62,6% serta kapasitas produksi tertinggi sebesar 201,58 gram/menit. Hasil analisis statistik menggunakan One Way ANOVA menunjukkan nilai signifikansi 0,000 ($p < 0,05$), yang menandakan bahwa variasi kecepatan potong berpengaruh signifikan terhadap kualitas hasil irisan dan kapasitas produksi mesin pemotong keripik tempe otomatis. Berdasarkan hasil penelitian, kecepatan potong 30 rpm merupakan kondisi operasi yang paling optimal.

Kata kunci : Kecepatan potong, kualitas irisan, Kapasitas produksi, Mesin potong tempe, One Way ANOVA

ABSTRACT

ANALYSIS OF THE EFFECT OF CUTTING SPEED ON THE PERFORMANCE OF TEMPE CHIPS CUTTING MACHINES

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This study aims to analyze the effect of varying cutting speeds on the performance of an automatic tempeh chip cutting machine, in terms of slice quality and production capacity. The method used was an experiment with varying cutting speeds of 30 rpm, 40 rpm, and 50 rpm, each performed three times using 500 grams of tempeh as a test sample. Slice quality was measured based on the percentage of slices in category A (intact), category B (cracked), and category C (crushed), while production capacity was calculated based on the weight of slices in category A per unit time. The results showed that cutting speed affected both slice quality and machine production capacity. A speed of 30 rpm produced the best slice quality with a category A percentage of 62.6% and the highest production capacity of 201.58 grams/minute. The statistical analysis using One-Way ANOVA showed a significance value of 0.000 ($p < 0.05$), indicating that cutting speed variation significantly affected slice quality and production capacity of the automatic tempeh chip cutting machine. Based on the results, a cutting speed of 30 rpm was the most optimal operating condition.

Keywords: Cutting speed, slice quality, production capacity, tempeh cutting machine, one way ANOVA